Cumberland Co. 26-02

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1998

(26021998)

NORTH CAROLINA DEPARTMENT OF
ENVIRONMENT AND NATURAL RESOURCES
DIVISION OF WASTE MANAGEMENT

NCDENR

November 4, 1998

Mr. William Squire
Department of the Army
Headquarters, XVIII Airborne Corps and Fort Bragg
Directorate of Public Works and Environment
Fort Bragg, N.C. 28307-5000

Re: Approval of the Revised Groundwater Assessment Plan (Permit #26-02).

Dear Mr. Squire,

Per our previous telephone conversations, the groundwater assessment plan submitted on behalf of Fort Bragg by BPA Environmental & Engineering Inc., and the subsequent revisions submitted by you is approved for implementation. The field work at the Longstreet Road Landfill facility shall begin within thirty (30) days. If the proposed initial phase does not define the contaminated portion of the aquifer or clarify the fate and transport of the contaminants, additional phases may be necessary.

Thank you for your prompt attention to these matters. If you have any questions, please contact me at (919) 733-0692, extension 261.

Sincerely,

Mark Poindexter, Hydrogeologist
Groundwater Compliance Unit
Solid Waste Section

c: Phil Prete
Terry Dover
Isaiah Guyton
central file

C:\WPDOCS\COUNTIES\CUMBERLA\FORT_BRA\26-02AST.LET

401 OBERLIN ROAD, SUITE 150, RALEIGH, NC 27605
PHONE 919-733-4996 FAX 919-715-3605

SCAN DOC.

26-02

MEMO

DATE: 9-10-98

TO:

SUBJECT:

- squirew@bragg.army.mil

US 401, turn (past Kelly Springfield) Right on Andrews Rd, left & Right Eureka Springs, turn left on Hangcutt Rd. turn Right Murchinson Rd., Right toward shopping Center, Burger King

Building 1933 Riley & Butner

Bill Squire 910-396-3341/3372

From:

North Carolina Department of Environment, Health, and Natural Resources

Printed on Recycled Paper

IMPLEMENTATION PLAN
GROUNDWATER ASSESSMENT AND CORRECTIVE ACTION
LONGSTREET ROAD MSW LANDFILL
(PERMIT # 26-02)
FORT BRAGG, NORTH CAROLINA

PREPARED FOR

PUBLIC WORKS BUSINESS CENTER
FORT BRAGG, NORTH CAROLINA

AUGUST 21, 1998

BPA Environmental & Engineering, Inc.

(336) 272-9713 2641-G Randleman Road, Greensboro, NC 27406-5159

BPA Environmental & Engineering, Inc.

John E. Palmer, P.G.
E.W. Scarlett, Jr., P.G.
R. Edward Hedgecock, P.E., P.G.

2641-G Randleman Road
Greensboro, NC 27406-5159
(336) 272-9713

August 21, 1998

Mr. Mark Poindexter, Hydrogeologist
Division of Solid Waste Management
Solid Waste Section
P.O. Box 27687
Raleigh, NC 27611-7687

Re: Longstreet Road MSW Landfill
Implementation Plan
Groundwater Assessment and Corrective Action
Fort Bragg, North Carolina
BPA No. 0170.012

Dear Mr. Poindexter:

Enclosed is one copy of our report titled "Implementation Plan, Groundwater Assessment and Corrective Action, Longstreet Road MSW Landfill (Permit #26-02), Fort Bragg, North Carolina" If you have any questions please call.

Sincerely yours,

BPA Environmental & Engineering, Inc.

E. W. Scarlett, Jr., P.G.
Principal

EWS/cwm

Fort Bragg
Longstreet LF.

Revisions to WQAP
From Bill Squire 10/19/98
viz email.

CHANGE 1:

PURPOSE: Change Request for Proposal to install 3 monitoring wells and 10 piezc ometer wells:, BY CHANGING PIEZOMETER WELL SPECIFICATION

Install 3 monitoring wells

Change: (One type 3 well approximately 100 feet deep,
To: "A properly installed monitoring well to sample groudwater at depth"
Rationale; Type 3 is more descriptive to our contracting people, but does not imply the same to the State.

Change: "Install 10 ea piezometer wells."

To "Install 10 each temporary monitoring wells, not to be left for an extended time."
Rationale: they are not intended to remain longer than necessary to identify water levels.

10/20/98
Wes Scarlett & I discussed replacing shelby tube analysis (K, porosity, etc.) & slug tests w/ single well pumping tests on all 3 proposed wells.
He will check w/ Mr. Squire for his approval.

Received from Bill Squire 10/5/98 by email. Revisions/additions to WQAP submitted by BPA.

Re the RFP for installing 3 monitoring wells and 10 ~~piezometer wells~~ geoprobes for one line H2O level Readings.

Install 3 monitoring wells. (Check protocol with Larry Rose of DENR water quality section of Solid Waste Division to ensure conformance with approved assessment plan and to ensure authorization is granted by State to install the wells.)

1 background, type 2 well, approximately 100 feet deep west of the landfill.

1 pair of nested wells consisting of :
One type 2 well approximately 60 feet deep
(One type 1 or 2 well approximately 100 feet deep,
Nest the 60 and 100 foot wells east of the landfill and adjacent to McPherson Creek.

Each well must sample and analyze one undisturbed soil sample from the conductive (water-bearing) zone. Perform soil classification per Unified Soil Classification System (USCS) to include porosity, effective porosity, and permeability testing.

Perform field classification each 5 feet per Unified Soil Classification System (USCS). Perform Standard Penetration Testing with split spoon tester.

After wells installed, purge and perform an in situ permeability (slug) test. or single well pumping test.

f. Read water elevations (depth) 24 hours after installation of each well. (mws & piez.)

Install 10 ea ~~piezometer wells.~~ geoprobes

Perform field classification each 5 feet per Unified Soil Classification System (USCS). ~~Perform Standard Penetration Testing with split spoon tester~~.

Read water elevations (depth) 24 hours after installation of each ~~well.~~ geoprobe

Provide following data/records to POC, Fort Bragg:

Raw data/records.

Well completion records (with field logs).

Sample results.

(Separately, Fort Bragg will determine (survey) horizontal and vertical control of the 13 new wells, measure the elevations of the 13 new wells and existing 6 wells within seven days of installation of last well, and generate a map of ground water contours based on the data developed.)

Post-it® Fax Note 7671	Date 10-6-98	# of pages ▶ 1
To Wes Scarlett	From M. Poindexter	
Co./Dept. BPA	Co. NCDENR-DWM	
Phone #	Phone # 919-733-0692	
Fax # 336-273-4057	Fax # 919-733-9810	

PURPOSE: Change Request for Proposal to install 3 monitoring wells and 10 piezc ometer wells:, BY CHANGING PIEZOMETER WELL SPECIFICATION, I.E., DELETE REQUIREMENT FOR STANDARD PENETRATION TESTING OF PIEZOMETERS.

Install 3 monitoring wells. (Check protocol with Larry Rose of DENR water quality section of Solid Waste Division to ensure conformance with approved assessment plan and to ensure authorization is granted by State to install the wells.)

1 background, type 2 well, approximately 100 feet deep west of the landfill.

1 pair of nested wells consisting of :
One type 2 well approximately 60 feet deep
(One type 3 well approximately 100 feet deep,
Nest the 60 and 100 foot wells east of the landfill and adjacent to McPherson Creek.

Each well must sample and analyze one undisturbed soil sample from the conductive (water-bearing) zone. Perform soil classification per Unified Soil Classification System (USCS) to include porosity, effective porosity, and permeability testing.

Perform field classification each 5 feet per Unified Soil Classification System (USCS). Perform Standard Penetration Testing with split spoon tester.

After wells installed, purge and perform an in situ permeability (slug) test.

f. Read water elevations (depth) 24 hours after installation of each well.

Install 10 ea piezometer wells.

Perform field classification each 5 feet per Unified Soil Classification System (USCS).
~~Perform Standard Penetration Testing with split spoon tester.~~

Read water elevations (depth) 24 hours after installation of each well.

Provide following data/records to POC, Fort Bragg:

Raw data/records.

Well completion records (with field logs).

Sample results.

(Separately, Fort Bragg will determine (survey) horizontal and vertical control of the 13 new wells, measure the elevations of the 13 new wells and existing 6 wells within seven days of installation of last well, and generate a map of ground water contours based on the data developed.)

Filename: Re

Rcvd. by email from B. Squire 9/11/98.

Re the RFP for installing 3 monitoring wells and 10 piezc ometer wells:

Install 3 monitoring wells. (Check protocol with Larry Rose of DENR water quality section of Solid Waste Division to ensure conformance with approved assessment plan and to ensure authorization is granted by State to install the wells.)

a) 1 background, type 2 well, approximately 100 feet deep west of the landfill. (confining unit?)

b) 1 pair of nested wells consisting of :
One type 2 well approximately 60 feet deep
(One type 3 well approximately 100 feet deep, — further explanation of telescoping & depth.
Nest the 60 and 100 foot wells east of the landfill and adjacent to McPherson Creek.

Each well must sample and analyze one undisturbed soil sample from the conductive (water-bearing) zone. Perform soil classification per Unified Soil Classification System (USCS) to include porosity, effective porosity, and permeability testing.

Perform field classification each 5 feet per Unified Soil Classification System (USCS). Perform Standard Penetration Testing with split spoon tester.

After wells installed, purge and perform an in situ permeability (slug) test. or single well pumping test. (optional)

f. Read water elevations (depth) 24 hours after installation of each well.

Install 10 ea piezometer wells.

Perform field classification each 5 feet per Unified Soil Classification System (USCS). Perform Standard Penetration Testing with split spoon tester.

Read water elevations (depth) 24 hours after installation of each well.

Provide following data/records to POC, Fort Bragg:

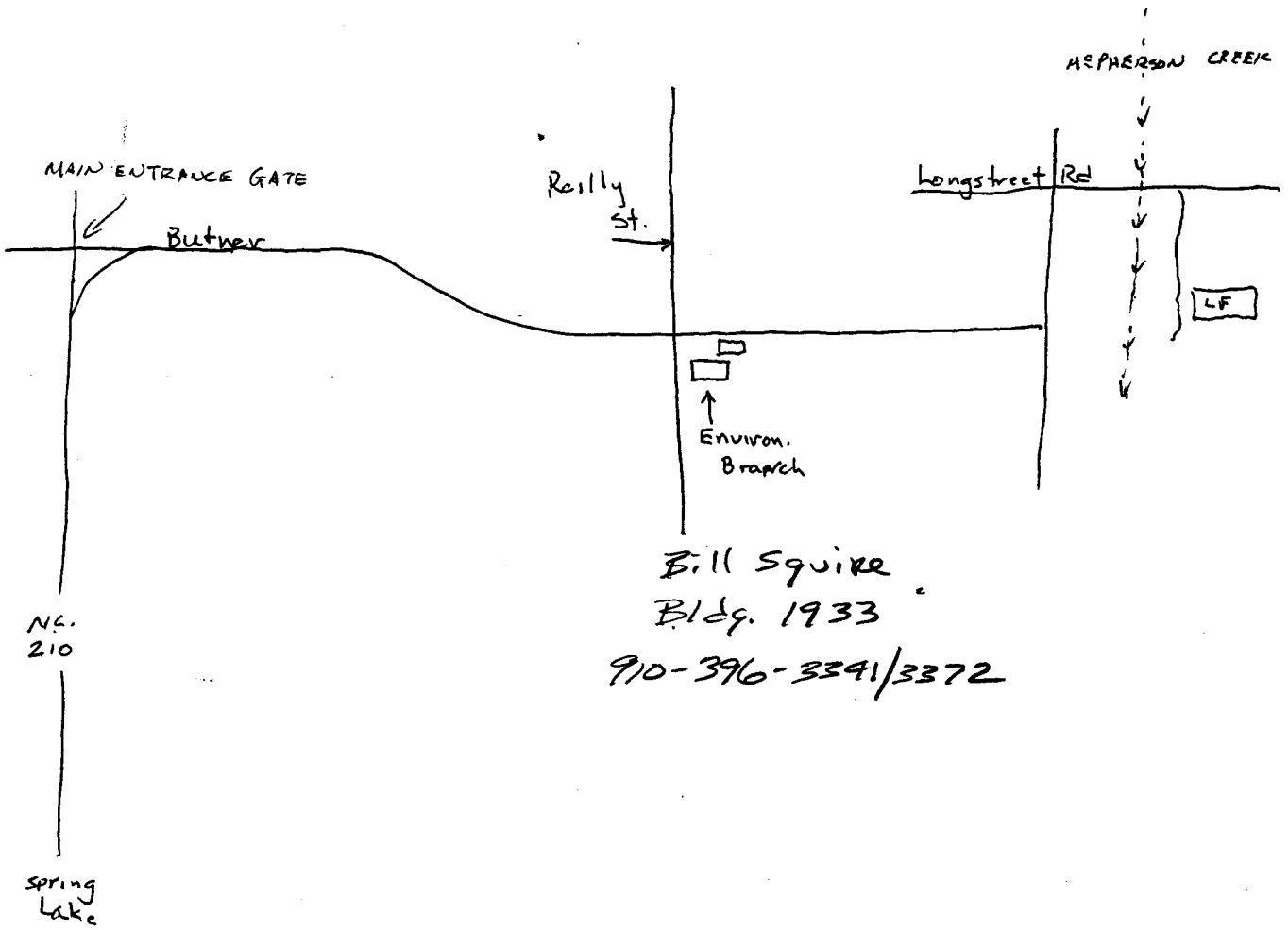
Raw data/records.

Well completion records (with field logs). Will be completed on MWs?

Sample results.

(Separately, Fort Bragg will determine (survey) horizontal and vertical control of the 13 new wells, measure the elevations of the 13 new wells and existing 6 wells within seven days of installation of last well, and generate a map of ground water contours based on the data developed.)

soon as permanent —
→ need proposed locations



Bill Squire
Bldg. 1933
910-396-3341/3372

IMPLEMENTATION PLAN
GROUNDWATER ASSESSMENT AND CORRECTIVE ACTION
LONGSTREET ROAD MSW LANDFILL
(PERMIT # 26-02)
FORT BRAGG, NORTH CAROLINA

PREPARED FOR
PUBLIC WORKS BUSINESS CENTER
FORT BRAGG, NORTH CAROLINA

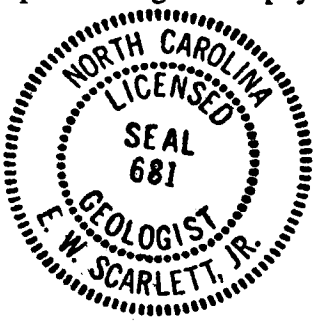
AUGUST 21, 1998

BPA Environmental & Engineering, Inc.

(336) 272-9713 2641-G Randleman Road, Greensboro, NC 27406-5159

I hereby certify this 21st day of August 1998, that this report was prepared by me or under my direct supervision.

E.W. Scarlett, Jr., P.G.
Principal Geologist/Geophysicist



Technical review performed by:

John M. Stewart, P.G.
Geologist

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IMPLEMENTATION PLAN
GROUNDWATER ASSESSMENT AND CORRECTIVE ACTION
LONGSTREET ROAD MSW LANDFILL (PERMIT # 26-02)
FORT BRAGG, NORTH CAROLINA

1.0 INTRODUCTION

Current State regulations require groundwater sampling for the Federal Appendix I constituents as published in 40 CFR Part 258 at all active MSW landfills that received waste after October 1993. These constituents are a subset of the Federal Appendix II constituent list as published in 40 CFR Part 258. Landfills that have groundwater protection standard violations during Appendix I sampling are required to monitor groundwater quality on at least a semiannual schedule. One sampling event must include the complete Appendix II constituent list and one sampling event must include the Appendix I list plus any Appendix II constituents not included in the Appendix I list that are detected in the groundwater. These additional constituents are designated triggered Appendix II constituents. All sample analyses must meet the North Carolina practical quantitation limits (NC PQLs) set forth in the most current North Carolina Solid Waste Section memoranda.

The results of Appendix I groundwater monitoring (initiated 7/95) and Appendix II groundwater monitoring (initiated 6/96) have established that the Longstreet Road MSW Landfill has impacted groundwater quality immediately adjacent to the disposal area (see Figure 1 for site location). Three Appendix II constituents (dichlorodifluoromethane, mercury, and sulfide) have been detected at concentrations above the North Carolina practical quantitation limits (NC PQLs) in the wells that comprise the groundwater monitoring system for the Longstreet Road facility. All six monitoring wells have been impacted by at least one Appendix II constituent. Dichlorodifluoromethane has been detected above the NC PQL in all six wells, but the concentrations have not exceeded the 15A NCAC 2L groundwater protection standard. Mercury has been detected above both the

NC PQL and the 2L groundwater protection standard in MW-6 and MW-8. Sulfide has been detected above the NC PQL in MW-8; there is no 2L groundwater protection standard for sulfide. Control chart and one-way parametric analysis of variance (ANOVA) statistical evaluations did not detect any statistically significant changes in the triggered Appendix II constituent concentrations.

BPA Environmental & Engineering, Inc. (BPA) has been authorized by the Fort Bragg Public Works Business Center (PWBC) to address the groundwater assessment and corrective action requirements discussed in the NC Division of Solid Waste Management, Solid Waste Section letter to PWBC dated 4 March, 1998. The current water quality monitoring program has addressed 15A NCAC 13B.1634 (Assessment Monitoring Program) paragraphs a, b, c, and d. In order to address the remaining requirements in .1634, the PWBC proposes to install and sample additional monitoring wells, as discussed in Sections 2 and 4, to characterize the nature and extent of the contaminant plume. The Division of Solid Waste Management will then be consulted to establish groundwater protection standards for any Appendix II constituents present in the contaminant plume based on the provisions in .1634.

15A NCAC 13B.1634(g) requires that an Assessment of Corrective Measures (.1635) be initiated based on the results of the additional investigations. After assessing the available corrective measures that are considered practical and effective, a remedy will be selected (.1636 - Selection of Remedy). PWBC will submit the proposed remedy and implementation schedule to the Division for approval at the completion of the selection process. The Implementation of the Corrective Action Program (.1637) will follow the completion and Division approval of the Selection of Remedy.

All work will be done by, or under the direct supervision of, a North Carolina Licensed Geologist in full accordance with the North Carolina Geologist Licensing Act (89E-13 and 89E-18).

2.0 SCOPE OF WORK

The scope of work to address the requirements set forth in 15A NCAC 13B.1634 is shown below. The scopes of work to address 15A NCAC 13B.1635, .1636, and .1637 will be determined based on the results of the investigations to define the nature and extent of the contaminant plume.

1) Install one nested pair of groundwater monitoring wells near McPherson Creek downgradient from monitoring well MW-8 to accomplish the following, dependent upon constraints dictated by geological and hydrological conditions:
   - Provide detailed stratigraphic information at this location to help refine the interpretation of hydrological conditions in the vicinity of the MSW disposal area.
   - Provide a shallow groundwater sampling location in the uppermost aquifer immediately below the water table.
   - Provide a deep groundwater sampling location. This sampling location will be screened immediately above the Cape Fear Aquiclude if the top of this formation lies within 100 feet of the surface.
   - Provide data that can be used to determine whether or not McPherson Creek is a groundwater discharge feature that is intercepting groundwater from the vicinity of the landfill.
2) Install a background groundwater monitoring well approximately 750 feet west of monitoring well MW-11 to provide a water table sampling location that is not influenced by the MSW facility.
3) Sample the additional monitoring wells for the constituents of concern on the same schedule as the current Appendix I/II sampling events.
4) Install six-to-ten temporary piezometers around the perimeter of the disposal area to better define the groundwater flow directions in the immediate vicinity of the MSW facility.

3.0 GEOLOGY

3.1 Regional/Local Geologic Setting

The site is in the inner part of the Coastal Plain physiographic province of eastern North Carolina. The 1985 Geologic Map of North Carolina indicates that the site is immediately underlain by the Late Cretaceous Middendorf Formation. According to the "Preliminary Explanatory Text for the 1985 North Carolina Geologic Map", this formation is primarily comprised of laterally discontinuous beds of sand, sandstone, sandy mudstone, and clay. Sandstone is the dominant lithology. The Middendorf Formation is underlain by the Late Cretaceous Cape Fear Formation, which generally consists of alternating beds of sandstone and mudstone that are laterally continuous over hundreds of meters. According to the "Groundwater Monitoring Baseline Sampling Report" prepared by Richard Rust and dated 19 January, 1996, Jamie Marlowe of the USGS has installed numerous monitoring wells that indicate that the Cape Fear Formation beneath Fort Bragg is a tight, stiff, green-gray, silty clay located at 180-200 feet MSL dipping slightly to the south/southeast. The report refers to the unit as the Cape Fear Aquiclude.

3.2 Soil/Rock Conditions

The soil borings for monitoring wells MW-6 through MW-11 encountered unconsolidated, discontinuous beds of sand, silt, and clay from the surface to the maximum depth of penetration (241 feet MSL). The materials were predominantly silty and/or clayey sands. No consolidated materials were encountered during the monitoring well drilling; however, three of the borings (MW-7 at 263 feet MSL, MW-8 at 261 feet MSL, and MW-11 at 282 feet MSL) terminated in dense, hard, gray clay. Monitoring well locations are shown on Figure 2.

The slug test results included in Rust's Baseline Sampling Report indicate that hydraulic conductivities for monitoring wells MW-6 through MW-11 range from 1.4×10^{-2} cm/sec to 8.9×10^{-2} cm/sec and average 5.2×10^{-2} cm/sec.

4.0 15A NCAC 13B.1634 - ASSESSMENT MONITORING PROGRAM

Since November 1996, Appendix I volatile organic constituents have been detected above NC PQLs on one or more occasions in all six monitoring wells and have exceeded the 15A NCAC 2L groundwater protection standards in MW-8, MW-10, and MW-11. Concentrations of 1,2-dichloropropane in MW-10, and benzene and trichloroethene in MW-11 each exceeded the 2L standards on two occasions. In MW-8, concentrations of benzene on one occasion and cis-1,2-dichloroethene, tetrachloroethene, trichloroethene, and vinyl chloride on four occasions have exceeded 2L standards. The triggered Appendix II volatile organic constituent dichlorodifluoromethane has been detected in concentrations above the NC PQL and below the 2L standard on one occasion in MW-10, four occasions in MW-7 and MW-8, and five occasions in MW-9 and MW-11.

In order to complete the requirements set forth in 15A NCAC 13B.1634 and address the concerns presented in the NC Division of Solid Waste Management, Solid Waste Section letter to Mr. Bill Squire of the PWBC dated 4 March, 1998, BPA proposes to install monitoring well nest MW-12A and -12B downgradient from MW-8 near McPherson Creek. The objectives at this location will be to provide information on the horizontal and vertical extent of the contaminant plume and to determine whether or not McPherson Creek is a groundwater discharge feature. This will be accomplished by installing a shallow well with the screened interval below the water table and an adjacent well screened at a significantly greater depth. An attempt will be made to locate and identify the Cape Fear Aquiclude discussed in the January 1996 "Groundwater Monitoring Baseline Sampling Report" prepared by Richard Rust. If the Cape Fear Aquiclude is encountered, the screened interval of the deeper well will be set just above the contact. The screen depths will be selected based on geological and hydrological observations by the on-site geologist. Figures 3 and 4 are schematics showing how the shallow and deep wells will be constructed. The approximate location for this proposed well nest is shown on Figure 2.

The presence of several Appendix I and Appendix II volatile organic constituents in MW-11 that are also found in the downgradient wells indicates that MW-11 is not serving as an effective upgradient/background monitoring location. BPA proposes to install monitoring well MW-13 approximately 750 feet west of MW-11 in a location where it is unlikely that groundwater quality has been influenced by the MSW disposal area. Figure 3 is a schematic showing how this well will be constructed. The approximate location for this proposed well is shown on Figure 2.

Prelandfill topography, current topography, and historical water level measurements in the existing monitoring wells do not provide sufficient data to accurately define the groundwater flow directions and gradients in the vicinity of the disposal area. Available data suggest that groundwater may be migrating from the disposal area in a radial pattern. BPA proposes to install six to ten temporary piezometers adjacent to the north, west, and south boundaries of the disposal area to adequately define groundwater flow directions and rates.

Horizontal and vertical survey coordinates will be required for the designated measuring points on the new monitoring wells and piezometers.

4.1 Auger Drilling

Drilling will be accomplished using hollow stem augers. Representative soil samples will be collected every five feet by means of the split spoon sampling procedure in accordance with ASTM Specification D-1586. In this procedure, a 2-inch O.D., 1-3/8-inch I.D., split spoon sampler is driven into the soil a distance of 24 inches by means of a 140 pound hammer falling 30 inches. All augers and split spoon samplers will be decontaminated between borings in order to prevent cross-contamination.

A field log of the soils encountered in each boring will be prepared by the on-site geologist. The soil samples will be classified on the basis of texture in accordance with the Unified Soil Classification System.

4.2 Monitoring Well Installation

The wells will be constructed using five or ten foot lengths of 2-inch (ID) PVC well screen (slot size 0.010 inches) and 2-inch (ID) Schedule 40 PVC riser pipe extending to the surface. The well screen in MW-12A will be placed to intercept groundwater flowing from the disposal area to McPherson Creek immediately below the top of the water table. The screen in MW-12B will be placed at a sufficient depth below the water table to provide data on water quality versus depth and the vertical component to vertical groundwater flow. An attempt will be made to locate the Cape Fear Aquiclude and place the screen immediately above the unit. The screen in MW-13 will be placed such that the water table lies within the screened interval. Screen depths will be selected by the on-site geologist based on data gathered during drilling. A sand pack of clean quartz sand will be placed around the screened sections of the wells and a bentonite seal will be placed immediately above the sand pack and screen. The wells will then be grouted to the land surface using neat Portland cement.

All wells will be installed within a protective casing and locked to discourage unauthorized access and prevent outside contamination. The wells will be developed by pump and surge using the drill rig.

4.3 Groundwater Sampling

The groundwater monitoring locations at MW-12A, MW-12B, and MW-13 will be sampled for Appendix I and triggered Appendix II constituents to provide information on the nature and extent of the contaminant plume.

4.4 Schedule for Implementation of Assessment Monitoring

- Initiate fieldwork - Spring 1999
- Complete fieldwork - Spring 1999
- Submit report - Summer 1999

5.0 15A NCAC 13B.1635 - ASSESSMENT OF CORRECTIVE MEASURES

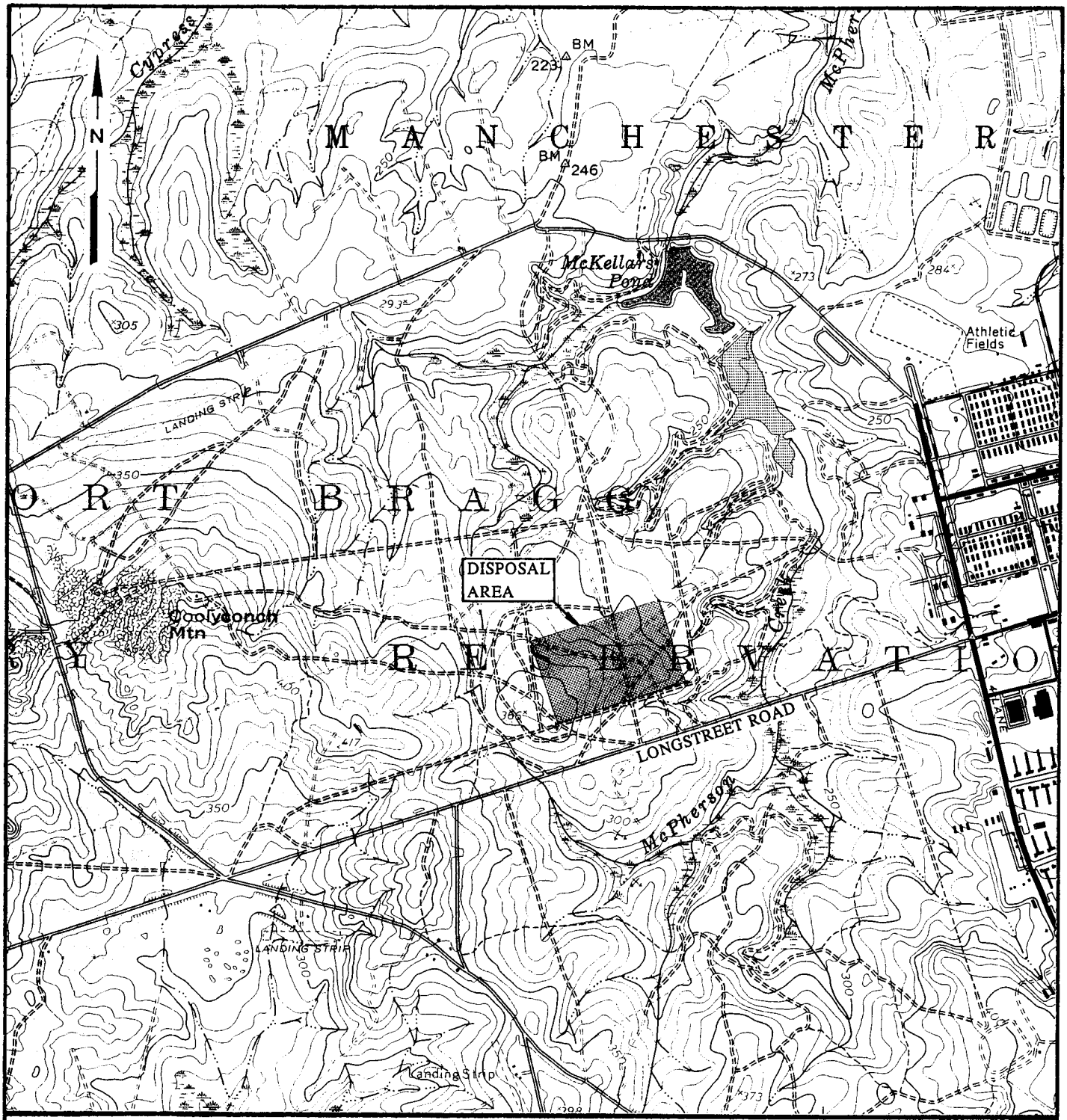
15A NCAC 13B.1634(g) requires that an assessment of corrective measures be initiated based on the results of the additional investigations to determine the nature and extent of the contaminant plume and the requirement to safeguard public health and safety. This assessment will be made upon the completion of the investigations discussed in Section 4. A public meeting will not be necessary since Fort Bragg owns and controls the area surrounding the Longstreet facility for more than two miles in all directions and there are no quarters within greater than one mile of the facility.

6.0 15A NCAC 13B.1636 - SELECTION OF REMEDY

Based on the results of the corrective measures assessment, a remedy will be selected that meets the requirements listed in 15A NCAC 13B.1636(b) or (e).

7.0 15A NCAC 13B.1637 - IMPLEMENTATION OF THE CORRECTIVE ACTION PROGRAM

Based on the results of the Selection of Remedy process, a corrective action groundwater monitoring program will be established and implemented to verify the effectiveness of the selected remedy. The remedy selected in 15A NCAC 13B.1636 will then be implemented.



OVERHILLS QUADRANGLE
NORTH CAROLINA
USGS 7.5 MINUTE TOPOGRAPHIC SERIES
1971

1000 0 2000 3000
SCALE IN FEET

Directorate of Public Works and Environment
Longstreet Road MSW Facility
Fort Bragg, North Carolina

BPA Environmental & Engineering, Inc.

SITE LOCATION MAP

FIGURE 1

NORTH CAROLINA DEPARTMENT OF
ENVIRONMENT AND NATURAL RESOURCES
DIVISION OF WASTE MANAGEMENT

NCDENR

August 4, 1998

Commander
XVIII Abn Corps & Fort Bragg
AFZA -PW-GC(Whitley)
Fort Bragg, North Carolina 28307-5000

RE: Revised Closure Schedule for the Fort Bragg Landfill: Permit No. 26-02.

Commander:

The Solid Waste Section has reviewed the request from Colonel Robert L. Shirron, letter dated 29 July 1998, requesting an extension of time to close the above referenced landfill. The Solid Waste Section(the Section) approves of the proposed schedule that has been outlined in the above referenced letter and approves of the proposed schedule, with a completion date of 1 December 1998. If for reasons beyond the control of Fort Bragg, the items addressed in the 29 July 1998 letter can not be completed in the proposed time frame; the Section shall be notified with an explanation provided for the delay, along with a revised time line. In the interim, Fort Bragg should maintain the existing cover and repair any erosion or damage done to the interim cover. If necessary, temporary seeding or mulch shall be applied to landfill areas to minimze on-site erosion.

As a reminder, in accordance with Waste Management rules 15A NCAC 13B section .1627(c)(7) "following closure of each MSWLF unit, the owner or operator shall notify the Division that a certification, signed by the project engineer verifying that closure has been completed in accordance with the closure plan, has been placed in the operating record".

This notification can accompany the CQA document, that is submitted to the Section upon completion of the cell closure, with the stated date that the notice was placed in the operating record.

401 OBERLIN ROAD, SUITE 150, RALEIGH, NC 27605
PHONE 919-733-4996 FAX 919-715-3605

Should you have any questions concerning this letter, please contact this office at (919) 733-0692.

James C. Coffey

James C. Coffey, Supervisor
Permitting Branch
Solid Waste Section

cc: Terry Dover
Ikie Guyton
Jim Barber
Raleigh Central File: Permit 26-02 Fort Bragg - Cumberland County

DEPARTMENT OF THE ARMY
HEADQUARTERS, XVIII AIRBORNE CORPS AND FORT BRAGG
FORT BRAGG, NORTH CAROLINA 28307-5000

REPLY TO
ATTENTION OF:

Public Works Business Center

JUL 29 1998

Mr. Jim Barber
North Carolina Department of Environment,
Health and Natural Resources
Division of Solid Waste
225 Green Street, Suite 714
Fayetteville, North Carolina 28303

Dear Mr. Barber:

This letter is to request an extension of the July 31, 1998 date for closure activities of the Fort Bragg municipal solid waste landfill, permit number 26-02.

The project was delayed while the erosion control permit was being revised to include tank trail haul routes to allow the contractor easier access to borrow areas, and by the unusual amount of rain in the early part of this year.

Negotiations with the contractor for a revised completion date are not finished, but we anticipate a completion date in late November, 1998. We will notify you as soon as a specific date has been set.

If you should have any questions and/or require any additional information, please contact Mr. George Whitley, (910) 396-3702/3934.

Sincerely,

Robert L. Shirron

Robert L. Shirron
Colonel, U.S. Army
Director of Public Works
Business Center

SCAN DOC

26-02

MEMO

DATE: 7-24-28

TO: per Wes Scarlett (BPA) by phone.

SUBJECT: Longstreet LF Fort Bragg

- Need 1 background well

- BPA recommends 1 nest DG of MW-8

- All MWs have indicated presence of VOCs (<½> 2L). MW-8 consistently has VOCs > 2L.

- > 300' from edge of waste to MW-8

From: _____

North Carolina Department of Environment, Health, and Natural Resources

BPA Environmental & Engineering, Inc.

John E. Palmer, P.G.
E.W. Scarlett, Jr., P.G.
R. Edward Hedgecock, P.E., P.G.

2641-G Randleman Road
Greensboro, NC 27406-5159
(336) 272-9713

July 21, 1998

Mr. Mark Poindexter, Hydrogeologist
Division of Solid Waste Management, Solid Waste Section
P.O. Box 27687
Raleigh, North Carolina 27611-7687

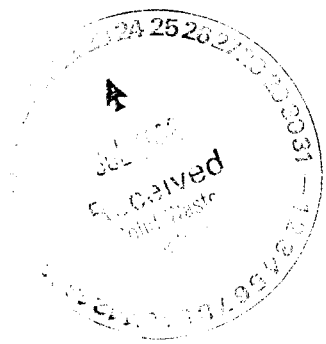
Re: Longstreet MSW Landfill
Fort Bragg, North Carolina
BPA # 0170.012

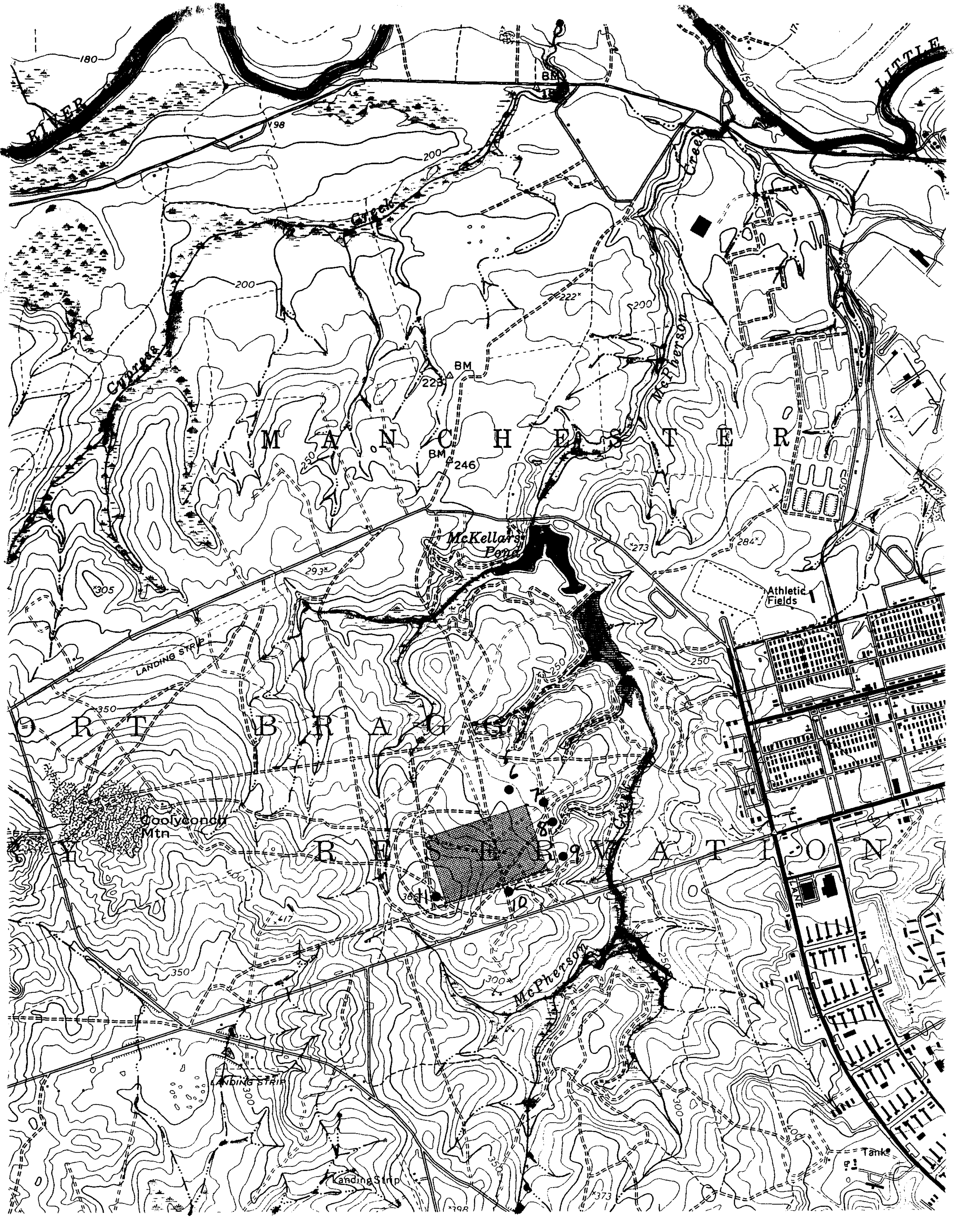
Dear Mr. Poindexter:

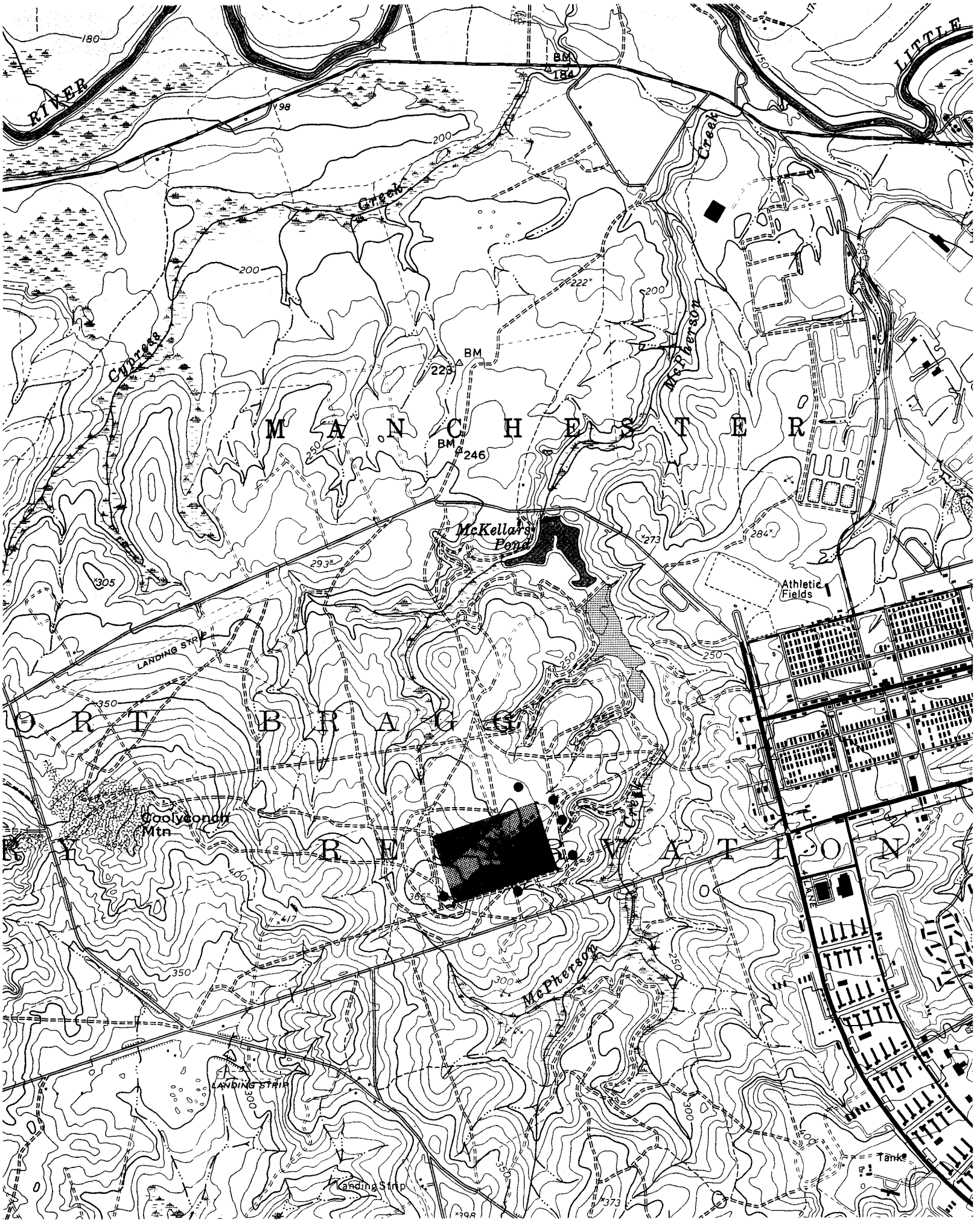
Enclosed is a map showing the approximate footprint for the Longstreet facility and locations for the monitoring wells. I will call you later this week or the first of next week to discuss potential locations for additional monitoring wells. I think it will help if both of us can refer to identical figures as we talk.

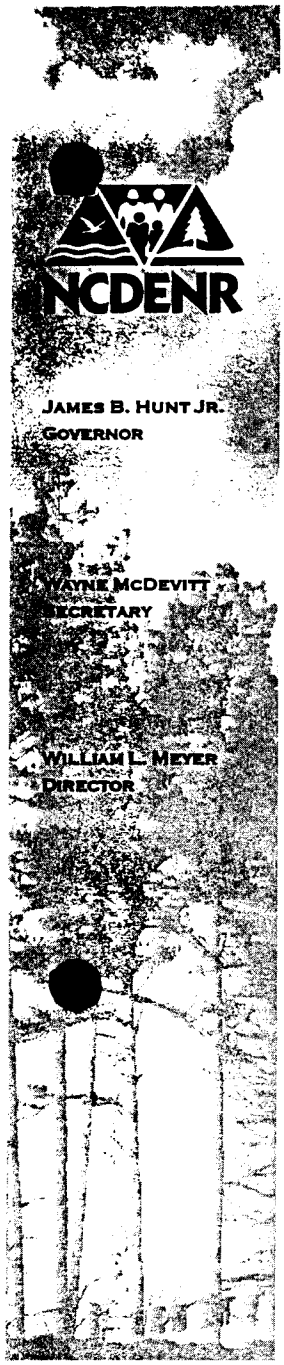
Sincerely,
BPA Environmental & Engineering, Inc.

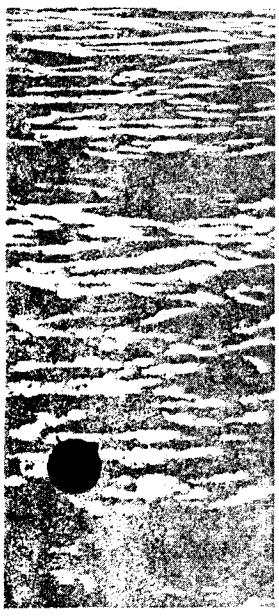
E. W. Scarlett, Jr., PG
Principal




RIVER
LITTLE
Cypress Creek
McPherson Creek
MANCHESTER
McKellars Pond
Athletic Fields
LANDING STRIP
FORT BRAGG
Coolyconch Mtn
RESERVATION
McPherson
Landing Strip
Tank
BM
180
198
200
222
223
246
250
273
284
293
305
350
366
400
417
300
373
398
6
7
8
9
10
11


RIVER
LITTLE
Creek
Cypress
McPherson
BM
184
223
246
MANCHESTER
McKellars Pond
Athletic Fields
LANDING STRIP
ORTBRAGG
Coolyeonan Mtn
RESERVATION
McPherson
LANDING STRIP
Landing Strip
Tanks
LANE





NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
DIVISION OF WASTE MANAGEMENT

March 4, 1998

Mr. Bill Squire
Public Works Business Center
Attn: Environmental Branch
AFZA-PW-EE
Fort Bragg, N.C. 28307

Re: Implementation of Groundwater Assessment and Corrective Action Requirements (Permit #26-02).

Dear Mr. Squire,

Fort Bragg has fulfilled the municipal solid waste landfill requirements of North Carolina Solid Waste Management Rules, 15A N.C.A.C. 13B, .1633 (Detection Monitoring Program) and .1634 (Assessment Monitoring Program), parts (a) and (b). Based on groundwater monitoring data from the facility Fort Bragg is now required to proceed with the remaining requirements of .1634, .1635 (Assessment of Corrective Measures), .1636 (Selection of a Remedy), and .1637 (Implementation of the Corrective Action Program). These requirements are intended to be self-implementing. Please proceed to implement these requirements within sixty (60) days.

Groundwater protection standards have been established for most Appendix II constituents detected in assessment monitoring. In general, the groundwater protection standards conform to N.C. 2L Groundwater Standards or recommended health-based concentrations determined by the Division of Epidemiology. If needed, these groundwater protection standards are available upon request to the Division of Waste Management, Solid Waste Section.

If you have any questions, please contact Mark Poindexter at (919) 733-0692, extension 261.

Sincerely,

Dexter Matthews, Section Chief
Solid Waste Section
Division of Waste Management

c: Phil Prete
Terry Dover
Isaiah Guyton
central file

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PHONE 919-733-4996 FAX 919-715-3605